

AMENDMENT TO THE CLAIMS:

1-2. (Canceled)

1 ~~3.~~ (Currently Amended) A method for manufacturing a bottom gate-type thin-film transistor on a transparent insulating substrate, comprising the steps of:

forming a gate electrode on a transparent substrate;

forming a gate insulating film on said gate electrode;

forming a semiconductor layer on said gate insulating film;

forming a mask on said semiconductor layer corresponding to said gate electrode;

doping impurities selectively into said semiconductor layer, using said mask;

removing said mask without performing heat treatment; and

forming an interlayer insulating film on said semiconductor layer, after removal of said mask,

wherein said interlayer insulation film directly contacts said semiconductor layer in a part above said gate electrode,

wherein said mask is configured and dimensioned to prevent impurity doping to a channel region.

2 ~~4.~~ (Original) A method defined in Claim ~~3~~, further comprising the steps of:

removing, after removal of said mask, residue of said mask, together with a native oxide film formed on said semiconductor layer before formation of said mask.

3 ~~5.~~ (Original) A method defined in claim ~~4~~, wherein removing said native oxide film by a dilute hydrofluoric acid.

4 ~~6.~~ (Previously Presented) A method defined in Claim ~~3~~, wherein the mask of at least some of a plurality of thin film transistors is shorter than the gate electrode in a channel length direction, and a region doped with impurities in the semiconductor layer thereof overlaps the gate electrode.

YKI-0079
10/003,339

~~5~~ 7. (Currently Amended) A method for manufacturing a bottom gate-type thin-film transistor on a transparent insulating substrate, comprising the steps of:

- forming a gate electrode on a transparent substrate;
- forming a gate insulating film on said gate electrode;
- forming a semiconductor layer on said gate insulating film;
- forming a mask on said semiconductor layer corresponding to said gate electrode;
- doping impurities selectively into said semiconductor layer, using said mask;
- thoroughly removing the mask used in the doping so that no layer having an impurity density of 10^{13} atoms/cc or greater remain on the semiconductor layer;
- removing said mask without performing heat treatment; and
- forming an interlayer insulating film on said semiconductor layer, after removal of said mask,

wherein said mask is configured and dimensioned to prevent impurity doping to a channel region.

~~6~~ 8. (Previously Presented) A method defined in Claim ~~7~~ 5, further comprising the steps of:

- removing, after removal of said mask, residue of said mask, together with a native oxide film formed on said semiconductor layer before formation of said mask.

~~7~~ 9. (Previously Presented) A method defined in Claim ~~8~~ 6, wherein removing said native oxide film by a dilute hydrofluoric acid.

~~8~~ 10. (Previously Presented) A method defined in Claim ~~7~~ 5, wherein the mask of at least some of a plurality of thin film transistors is shorter than the gate electrode in a channel length direction, and a region doped with impurities in the semiconductor layer thereof overlaps the gate electrode.